

REMARKS

The Examiner's Office Action of March 11, 2003 has been received and its contents reviewed. Applicants would like to thank the Examiner for the consideration given to the above-identified application.

By the above actions, claim 1 has been amended, claims 6-9 have been cancelled, and new claims 10-12 have been added. Claims 3-5 have been withdrawn from consideration in a response filed May 21, 2002 to an election/restriction requirement. Accordingly, claims 1 and 10-12 are pending for consideration, of which claims 1 and 11 are independent.

Referring now to the detailed Office Action, Claims 6-9 stand rejected under 35 U.S.C. §112, first paragraph, as containing subject matter which was not described in the specification. Specifically, the Examiner contends that the specification never discloses a ferroelectric film that includes a crystal composed of Sr, Bi, Ta and O as claimed in claim 6, and the specification never discloses that the ferroelectric film includes a crystal that does not include Ti as claimed in claim 8. As claims 6-9 have been canceled, as shown above, the §112, first paragraph, is now rendered as moot.

Claim 9 stands objected to as it is unclear to the Examiner why the claimed subject matters of claim 9 are identical to that of claim 7. As claim 6-9 have been canceled, as shown above, the objection to claim 9 is now rendered as moot.

Claims 1 and 6-9 stand rejected under 35 U.S.C. 102(e) as clearly anticipated by Yamazaki et al. (U.S. patent No. 6,225,185 – hereafter Yamazaki). This rejection is respectfully traversed at least for the reasons provided below.

According to amended claim 1, and as shown in, e.g., Fig. 1A, the contact layer is formed on the upper electrode such that the contact layer is not in contact with the capacitive insulating film.

According to page 2, lines 18-24 of the present specification, the contact layer is provided to solve the problem of poor adhesion between the upper electrode and the insulating film which covers the upper electrode.

Further, an object of the present invention is to prevent the degradation of the capacitance property of the capacitive insulating film. According to the presently claimed invention, in order to increase the adhesion between the upper electrode and the insulating film formed thereon, the metal atoms in the contact layer formed on the upper electrode is

diffused into the upper electrode by performing a high temperature treatment in oxygen ambient. However, the diffused metal atoms react with the capacitive insulating film and degrade the capacitance property thereof. Hence, in order to solve this problem, a metal oxide or metal nitride film is used to compose the contact layer, as recited in independent claims 1 and 11, so that the metal atoms in the contact layer will not diffuse into the upper electrode during the high temperature treatment performed in oxygen ambient.

In other words, it is not likely to achieve the object of the present invention by forming the contact layer, which includes the metal atoms, directly in contact with the capacitive insulating film such that the metal atoms can be diffused into the capacitive insulating film without passing through the upper electrode.

On the other hand, cited reference Yamazaki teaches, as shown in Fig. 3(c), forming an oxygen barrier film, which corresponds to the contact layer of the present invention, such that it covers the entire surface of a capacitive device composed of a lower electrode, a capacitive insulating film and an upper electrode.

An object of the invention of Yamazaki is to prevent the expansion and contraction of the lower electrode and the barrier film due to the high temperature performed in oxygen ambient. In order to solve this problem, the capacitive device is entirely covered by the oxygen barrier film, as disclosed in Yamazaki.

Applicants respectfully assert that Yamazaki fails to recognize the problems that the present invention is solving, such as the poor adhesion between the upper electrode and the insulating film formed on the upper electrode, and the degradation of the property of capacitive insulating film caused by the nucleic acid of the metal atoms, which are generated due to the forming of the contact layer for solving the above problem of poor adhesion.

Further, according to Yamazaki, in order to prevent the expansion and contraction of the lower electrode and the barrier film, the capacitive device is entirely covered by the oxygen barrier film. Hence, the oxygen barrier film of Yamazaki, which corresponding with the contact layer of the present invention, is formed directly in contact with the capacitive insulating film. As such, Yamazaki does not disclose a contact layer formed on the upper electrode so as not to contact with the capacitive insulating film, as recited in the pending claims.

Consequently, since each and every feature of the present claims is not taught (and is

not inherent) in the teachings of Yamazaki, as is required by MPEP Chapter 2131 in order to establish anticipation, the rejection of claim 1, under 35 U.S.C. §102(e), as anticipated by Yamazaki, is improper.

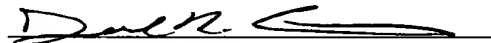
For the foregoing reasons, and since the structure and effect of the present invention are different from those of Yamazaki, the present invention is distinguishable over Yamazaki.

In view of the amendments and arguments set forth above, Applicants respectfully request reconsideration and withdrawal of all the pending rejections and objection.

New claims 10-12 have been added to further complete the scope to which Applicants are entitled.

While the present application is now believed to be in condition for allowance, should the Examiner find some issue to remain unresolved, or should any new issues arise, which could be eliminated through discussions with Applicants' representative, then the Examiner is invited to contact the undersigned by telephone in order that the further prosecution of this application can thereby be expedited.

Respectfully submitted,


Donald R. Studebaker
Registration No. 32,815

NIXON PEABODY LLP
8180 Greensboro Drive, Suite 800
McLean, VA 22102
(703) 770-9300